

Hostetter (J. S.)

Physical education

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The Author is a teacher in the
Public Schools one who has not
had the advantages of a living instructor
& one who considers his efforts in
the great work of education but
PHYSICAL EDUCATION:

humble and regards this Essay
but an humble contribution in
this **AN ESSAY**, yet if
it will receive a "notice"
in your **READ BEFORE THE** Journal it shall
be most thankfully regarded.

Cumberland County Teachers' Institute,

BY J. S. HOSTETTER,

AT SHIPPENSBURG, PA.,

DECEMBER 30, 1857.

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CORRESPONDENCE.

SHIPPENSBURG, January 9th, 1858.

Dear Sir:—Being present at the late "Teachers' Institute," when you read an interesting and practical Essay on the "Laws of Health," we suggest that instead of giving it to some newspaper for publication, it should be printed in pamphlet form and distributed, so as to arouse attention to this much neglected but important subject.

D. STROH,
A. McELWAIN,
D. L. LAVERTY.

MR. J. S. HOSTETTER.

MECHANICSBURG, January 11th, 1858.

Gentlemen:—Thank you for your appreciation of my feeble efforts in calling attention to the subject of "Physical Education." But the Essay was not written with the view of having it printed in pamphlet form, and presents but a meager sketch of the subject; yet if you think it contains anything that may have a tendency to arouse some one to the investigation of what we should all understand—the "Laws of Health"—it is cheerfully submitted, imperfect as it is.

J. S. HOSTETTER.

PHYSICAL EDUCATION.

pre eminently

MAN is ~~permanently~~ a revelation of God, and when he lives in harmony with nature—that is, in obedience to the laws of his being—he is in himself the highest known expression of Divine wisdom, power and goodness.

We are taught by high authority that “man is fearfully and wonderfully made;” and by human teachings, that “the proper study of mankind is man.” And nothing, perhaps, can add more to his happiness than a knowledge of his own *constitution*, and the laws by which it is regulated, in its several departments.

Man may be considered as a threefold being, having three separate and distinct natures, entering into one, to complete the whole, viz:—Physical, Intellectual and Moral, each having faculties peculiar to itself, and regulated by its own laws. And to understand these should be one of his chief studies.

Now, the education of man comprehends all those influences which tend to draw forth, develop, strengthen, and discipline all the functions and faculties of the whole man. To develop, strengthen, and regulate, progressively, harmoniously and simultaneously, all the powers bestowed upon him by the Creator.

There is, to my mind, an error in that system of education which seeks to develop only the mind, and elevate, almost Heaven-high, the intellect, to the neglect, and perhaps at the expense of the body and heart.

For man to be healthy, happy and useful, every part of his triad nature must be developed in harmony.

It is indeed true that man was made to *think*, but he was made no less to *feel* and *act*.

And it is an assertion that can be sustained by facts, that it is the individual whose triple nature is best balanced by a proper and harmonious education, who can think, feel and act most happily and successfully.

Man may be regarded as the creature of education, in every department of his constitution, for this purpose he comes into the world the most helpless and dependent of all living creatures. His education begins as soon as he first draws the atmospheric air into his lungs.

The parent is the educator, assisted by the teacher from the age of five years to eighteen or twenty, when the work falls into his own hands.

The appliances are instruction and discipline—precept and example.

Instruction, to enlighten and inform ;

Discipline, to regulate and subordinate ;

Precept, to direct and guide, and

Example, for imitation and to lead.

Now when this system is in perfect working order, it bestows physical training, intellectual development, moral culture and discipline upon its sub-

ject, thus producing a complete creature, one who can think, feel and work.

It is a mistake to suppose that man was made to think only, for his Creator gave him a pair of hands, and told him to "earn his bread by the sweat of his brow."

The sum of the whole matter is a sound body, with a sound mind and a sound heart in it. The individual whose head can think, whose hands can work, and whose heart can feel, is the properly educated man.

And I stand before you this evening to speak of that part of the work which pertains to the physical constitution; *and this involves a knowledge of the physical functions and the laws of health.*

Now all created things in the universe of God are under law. There are laws by which the planets roll—laws by which the sun shines and the moon reflects her light—laws by which the winds blow and the tides ebb and flow—laws by which the water rises in vapor and falls again in rain or snow—laws by which the acorn germinates and grows up into the oak. So there are laws for the regulation of every part of our physical constitution, or "the House I live in."

There are laws by which the bones and muscles grow and perform their functions. There are laws of digestion, respiration, circulation, perspiration, sensation, &c.

Now to understand these and live in harmony with them, is to live long in health and happiness.

The bony system, or frame-work of the "House I live in," is composed of upwards of 200 pieces,

which is so admirable, curious and complete in all its parts, and uses that if the best artist in the world was to study and exert his ingenuity for a thousand years, he could not contrive a better method of making a human skeleton. Yet by neglect, or misuse, or abuse, as well as by an improper training in youth, this frame-work may become weak and deformed.

The growth of man is the work of God; it is the result of those eternal laws which the Creator conferred upon him; but his *formation* is the work of the influences under which he may chance to fall; and these influences may be said to constitute his education.

Is it not a fact that many of us go through life stooped, with round shoulders, narrow chests, and distorted spines; which make us a people, noted for spinal affections, lung diseases, and a host of other maladies?

We are told that among the red men of the forest, round shoulders, narrow chests, and spinal affections, were not known even when they lived on these same grounds that we now occupy. Now there must be a cause for this difference, and what can it be?

I venture to suppose, at least, that one reason of this difference is, that the Indian Mother brings up her babe in the open air, with its head on a plane with the body. Our mothers rear their little ones, in heated, almost air-tight rooms, with stacks of pillows under the head, thus throwing the head and shoulders forward, and the chest backward, robbing the lungs of the room that nature designed

for them ; and, by a double effort, *the blood* of the oxygen that it needs ; because the lungs are not only incapacitated to receive it, but the places where these persons are kept have not got pure air. Parents and teachers should never forget that the young are as susceptible of physical training as of moral culture. And especially should the bony system be trained up in the way that it should go.

Behold the upright, says *the book*. No good thing will he withhold from them that walk uprightly. Now who would say that this has not reference to physical uprightness, as well as moral ?

What are the good things of this life ? Are they not bread, water and air ? Now the first two are sure to all, but the last, only to him that walks uprightly.

Now while we are becoming stooped and round shouldered, we are compressing and cramping the chest, which prevents the free motion of the lungs, and consequently cannot take in and use as much air as the blood demands. And when this deformity becomes considerable, it is an annoyance, not only to the lungs, but an injury to the heart, stomach, and the whole internal machinery.

And more than this, we often find those with round shoulders have crooked spines in addition. The very persons who feel either so weak, or indolent, that they cannot support themselves in an upright position, suffer their shoulders, with the head and neck, to pitch forward, and in this way compress the collar bone, and distort the whole frame work of the chest.

These persons when sitting at the table, or desk,

will nearly always be found with one shoulder more elevated than the other, which has a tendency to curve the spine, and induce a stooped attitude.

Every child should have a desk of proper height at school, and there support its arms equal and regular—and it is among the teacher's first duties to see that this is done.

And no parent should rest satisfied until he sees with his own eyes, how his child is accommodated in this respect.

The bones in youth are soft, and will easily bend; for this reason children should be taught to sit and stand erect, and frequently change their position. Their seats should be low, so that their feet may be supported, and the backs of the same should be of a proper construction, so that they may acquire the habit of leaning backward instead of forward.

The clothing of the young should also be loose about the chest, as the ribs in childhood are so yielding, and so many serious evils follow the compression of the chest.

But attached to this frame-work of bone, is a system of muscles, in which resides the power of motion. This is composed of upwards of 400 muscles, or bundles of lean meat; and these constitute the great bulk of the body, giving it form and symetry, and power of locomotion. The muscles are elastic, spring-like organs, by the contraction of which every motion in, and of the body, is produced.

The manner of performing the various motions

of the body, and the fact that we do actually pry ourselves about from place to place, by various sets of levers and pullies, deserves to be regarded as one of the greatest wonders of the world.

I cannot raise a hand, or move a foot, or bend a finger, or utter a word, without the contraction of some of these spring-like organs ; the very beating of the heart is produced by muscular action.

Now, that the muscles be healthy, strong, elastic, and active, certain conditions must be complied with ; and among the first of these is exercise.—This is an inexorable law of muscle. If you tie up your arm, so that the muscles will have no motion, or exercise, they will become soft and weak, and in course of time will actually waste away. The right arm of the blacksmith is said to be stronger than the left,—the reason is, he uses it more than the other. And it is a fact that needs no argument, that those persons who exercise the most are the strongest.

The indolent, the lazy, and all those whose circumstances will not allow them active exercise, have soft and weak muscles. Here is it physically true, as well as morally, that to him who hath shall more be given—for by exercise we gain more strength to what we have ; for want of exercise we lose even what we have got.

Exercise is of the highest importance to all, but especially should the young have it. It is wrong to confine children to the school-room, or any other place, for hours together, especially where the ventilation is bad. Confine a set of boys, or girls, to the school-room for hours together, then let them

out into the open air, and the manner in which they shall exercise themselves will convince any intelligent observer of the necessity of muscular motion—those of the voice not excepted.

Pupils are actually made unfit for the duties of the school-room, by pinning them to their seats for hours together. And teachers sometimes make a sad mistake in confining their scholars closely for days together before an examination; far better let them run loose for several days to insure order, as well as untrammelled recitations, on examination day.

The young should all be taught manual labor of some sort, and that in the open air as much as possible. It was customary among the ancients, and is even now among some nations, to train their children to some hand craft or other. And if you will go to the trouble to examine, you will find that these are the healthiest, happiest, and the longest lived people. It is no disgrace to learn to work; the great Paul, we are told, was a tent maker, and even our Saviour himself worked at the trade of carpenter in his early days.

Hundreds and thousands of young men of our day, who might be a blessing to the world, are a curse to their generation, just because they were not taught to work in their youth.

Action, exercise, or motion, appears to be a law of our nature; without it there can be neither health nor strength in the physical, mental, or moral man.

Pope said, "order is Heaven's first law." Now it appears to my mind that motion is before order.

What can we see in the universe of God that is not in motion, from a drop of water in the ocean up to the mightiest world that rolls through the immensity of space? All is in motion. It may be that Pope meant by order, the harmonies of motion.

But as true as it is that exercise is a law of muscle, so it is equally true that the muscles may be overtaken. Protracted exercise, or violent efforts, either in play or labor, is productive of much evil. How often do persons for a wager, even sometimes for sport, jump, or lift weights, and make other muscular efforts, that overtake them. And because pain does not immediately follow, they vainly hope they have done themselves no injury.—Here is it most emphatically true, what Solomon says, “Because sentence against an evil work is not executed speedily, therefore the hearts of the children of men are fully set in them to do evil.”

How many suffer with the rheumatism, who can trace the cause to some parts of their lives, when they overtaken their muscles, by excessive labor, or even folly and sport.

I read an account, but a few weeks ago, of a man, who was famous for lifting weights, jumping and wrestling, until the age of 50 years, when he was attacked with severe rheumatism, which tortured him for twenty years, until nature was completely exhausted, and he wasted away under it into the grave.

In the next place, we must consider that the body is constantly wearing out, for where there is action, there is waste, and we have already told you that we cannot move hand or foot, or tongue

without muscular action; so there is a constant wearing out, or “pulling down” of the system, which must be as constantly *repaired*, or “built up.” This is done by the blood.

Now the blood is manufactured from the food we eat, by the machinery of digestion. And it is of the highest importance that we understand the condition of this apparatus. There are scores and hundreds of us complaining because we must be constant companions of that incorrigible pest dyspepsia; yet we are constantly fostering it by violating the laws of digestion. And never shall we get rid of this destroyer of mind and body, until we understand and obey these laws.

There are persons who have a notion that the process of digestion is wholly confined to the stomach—this is a mistake.

Digestion begins in the mouth, and goes on until the nutritive part of our food is changed into blood.

The machinery of digestion is intended to effect the various processes of *mastication*, *chymification*, *chylification*, *sanguification*, &c.

The mouth is the organ of mastication—Here the food is chopped and insalivated.

In the stomach it is changed into chyme by the aid of the gastric juice. In the alimentary canal it is converted into chyle by the aid of a fluid which the liver supplies.

The lacteals now gather the nutritive parts, and by the thoracic duct it is poured into the blood just above the left shoulder, and is carried into the right side of the heart.

The heart now sends it out into the lungs, where it is oxygenated ; when it returns to the left side of the heart, from whence it is sent out to *build up* the waste places of the “ House I live in.”

A great error is committed by many in the first process of digestion, by eating too fast, as it is called. Two evils follow here ; 1st. The food is not sufficiently masticated, and this will impose the work of the teeth upon the stomach, no wonder the stomach should throw it back, and tell the teeth to do ~~its~~ first work over. 2d. It not only puts the food *too coarse* into the stomach, but also, without being properly blended with saliva, which is necessary to aid the gastric juice.

And we generally find in addition, that those persons who eat so rapidly drink a great deal at a meal. This they must do to wash the food down. For the morsel that will not remain under the teeth until sufficiently chopped, cannot be sufficiently moistened with saliva for swallowing, hence coffee, tea, or water must be resorted to. But it should be remembered, that coffee or tea, or even water is not saliva, that it will not aid in digestion, but rather prove a hindrance.

To keep the digestive organs in good tone, and healthy action, we should eat slowly at regular times, of plain food, and better not enough of this, than too much, masticate it thoroughly and drink but little at meals. Those who observe these rules, with moderate exercise in the open air, under the influence of solar light, will never be troubled with indigestion. Strong diet, a great deal of it, at all hours of the day, and, as Horace Mann says,

“thrown into the stomach,” where it swims in tea or coffee, or water, gives our people more misery than any other one thing.

The quantity of blood, said to be in a full grown person, is about three gallons. This passes through the heart and lungs every three minutes. It goes from the right side of the heart, to the lungs to meet the air, then returns to the left side of the heart, from whence it goes out into the extremities through the arteries, and returns by the veins.

It passes through the lungs at the rate of a gallon per minute, or sixty gallons per hour, which would be more than twenty hogsheads every twenty-four hours.

Now the object of this constant motion of the blood is, 1st, to gather up the waste matter or worn out particles, part of which it throws off into the lungs, in the form of carbon, and we breath it out; and 2d, to supply new particles to build up the system.

The lungs are the organs of respiration, in its passage through these the blood receives oxygen.

The lungs are composed chiefly of small tubes and air cells, of these there are hundreds and thousands and millions. Physiologists tell us, that their lining membrane exposes a surface to the atmosphere of not less than 4000 square feet. This cavity contains from two quarts to a gallon of air, and at each inspiration we take in, and expel, about a pint of fresh air. And we breathe about twenty times per minute, at which rate we take into our lungs about twenty pints of fresh air every minute,

or 150 gallons per hour ; which would be more than fifty hogsheads every day.

Now here we see that more than fifty hogsheads of atmospheric air goes into the lungs to meet more than twenty hogsheads of blood every twenty-four hours. This must have a meaning, yes it has a most definite meaning.

And we need even more than this for healthy respiration, Dr. Jarvis says, taking the lowest estimate, we spoil seven cubic feet of air every minute. Dr Ried allows even ten.

But why is so much air needed ? 1st, Because the oxygen, that is part of it, enters the blood and thus weakens the air. 2d, The lungs throws off with this weakned air, carbon, with which the air around us becomes poisoned, and makes it unsafe to be inhaled again.

Now if these things be facts, what must be the condition of that school-room, shut up from morning till night, with 40, or 60 pupils in it, spoiling each one, every minute not less than four cubic feet of air, until the whole is poisoned, which is done the first half hour.

You have no doubt all heard the often repeated story of the "Black Hole," at Calcutta, where 147 prisoners were confined in a dungeon, with little or no ventilation, and in less than twenty-four hours 124 perished, and the rest were nearly dead—and all this for the want of pure fresh air.

And we, civilized, refined and educated as we are, have "black holes" among us; they may not be as black as that at Calcutta—but they are black enough. And what are they ?

Why they are some of our sleeping rooms, some

of our school rooms, and some of our churches. If some of us, who sleep in close rooms, knew the condition of those rooms at times, we would fly from them as from the devouring element. And why do so many children complain of headache, languor and become feeble while going to school? It is because of the bad state of the air that they are compelled to breathe all day.

And how often have I been to church where the preacher complained of the sleepiness of his hearers, when in fact they could not help it, being cooped up almost air tight, without oxygen to stimulate the blood.

There is nothing, perhaps, among us as a people, that calls more loudly for attention, than the subject of ventilation.

Nature has supplied us with the element of air forty-five miles high, and we need it as copiously and essentially as the fish needs the water. And the Creator has placed in our chest, an apparatus which takes in fifty hogsheads of this element every day, and this the blood wants pure and fresh to prepare its materials to repair and "build up" the "House I live in." And it will not be until parents and teachers shall understand the high importance of ventilation, that the world will become healthy physically and morally.

But I must hasten on. For I wish to say something of that organ which envelops the body, the skin; for truly, this is an organ. The skin is not as some suppose, merely a covering, but like the lungs, and other organs, it performs various important functions.

Could we see the machinery of this part of the body, we should view it with utter astonishment ; but it cannot be seen by the unaided eye.

There are arteries and veins in it, through which the blood courses, to get solar light ; so full of nerves is it, that we cannot touch it with the point of a needle without hitting some of them ; and there are vessels in it which supply an oily substance.— But above all, and most important, it contains the apparatus of perspiration ; hundreds and thousands of small tubes are upon every square inch, called pores. Through these, the system throws off much of its worn out matter.

There appears to be a good deal of similarity between the office of the lungs and the skin ; at least, there exists a great sympathy between them, for when the one does not perform its functions properly, the other will be overtaken.

Now that the skin, like the other organs, may perform its various important functions, it must be made to obey certain laws.

Light, air and cleanliness, are among the first things to insure a healthy action of the skin. It must have solar light. You have, no doubt, all seen the effect of the potato vine growing in a dark cellar. I have seen some that have grown to the length of from six to eight feet there. But what is their appearance ? Have they that deep, natural color of a potato vine that grows in the field ? Are they strong and well stocked with vitality ? No, surely not ! Their appearance is pale, feeble, and truly pitiful. Expose them to the weather, and the first storm will blast them.

And are there not persons among us, who will compare with this potato vine? Yes, too many of them! Every possible effort is used to keep out the light, by means of blinds, curtains, gloves, veils, covered carriages, &c. No wonder we have faces almost as pale as the potato vine that grew in the dark cellar.

Now, do not misunderstand me, curtains, gloves, veils, &c., are not without their use, but we abuse them. One thing is certain, that whenever the young shall be taught to work in the light, physically, as well as morally, their reward shall be great.

But not only does this organ want light, but like the lungs, it demands pure, fresh air. To have this, we should be out in the open air as much as possible; we should be as little in bad air as in darkness.

But, above all, is cleanliness important to the healthy action of the skin. The skin exhales several fluids which intermix with the dust, making it foul; and when too long neglected, covers the body with a varnish, which will impede its healthy action. Washing and bathing cannot be too highly recommended.

But we sometimes hear persons say that bathing is only for the sick. This is a mistake. Did we wash and bathe more in health, we should not be so often sick. Jeremy Taylor says, "cleanliness is next to godliness;" and it would be a strange doctrine, indeed, to say that godliness is only needful for the sickly.

Bathing, or washing the entire body, affords a pleasure that would amply repay us, had it no other

arguments in its favor ; but it has a two-fold benefit besides this.

When it is briskly done—as it always should be—it gives exercise to the muscles, and excites the circulation ; and the friction of the skin will bring the blood to the surface, which will create a warmth, and make you feel brisk as youth. But above all, it will keep the skin clean and the pores open.

One thing more, and I am done. The brain is regarded as the seat of the mind, and it may be thought, that to treat this more properly, belongs to him who was to speak of intellectual education ; but the brain is an organized part, and therefore belongs to the physical economy.

The nervous system may be regarded as an intelligent province, of which the brain is the capital. It is also considered as the seat of the passions and moral feelings. And further, it is regarded as the chief source of that vital energy—sometimes called nervous energy—of which the physical system demands large supplies.

It is very evident that it bears important relations to the physical functions. Without it, the stomach cannot digest, no healthy blood can be manufactured. The lungs must have it ; the air, ever so pure and abundant, without this energy, would be but little better than so much smoke.

The brain, like the other organs, must have exercise ; without this, it cannot become efficient, either in thought or nervous energy.

But there is also danger of exercising it too much, and especially in youth.

It is confidently believed that hundreds go early

to the grave from the effects of a premature development of this organ. Excessive application of the mind, at any age, is injurious to the whole mental apparatus, and often impairs the health of the whole physical system.

Here is a large field for investigation, and it is hoped that every educator will make himself acquainted with this subject.

And now allow me to say, before I close, that there is much truth in the maxim, that "*man is a bundle of habits.*"

Our manner of life, in its various departments, resolves itself into habit; and well for that individual whose habits are correct; but woe! thrice woe! to that one who contracts bad habits in youth! Sitting at the saloon, or bar-room, until midnight, eating and drinking; then sleep in almost air-tight rooms, until a late breakfast; then eat warm bread, washing it down with hot coffee; then smoke and eat tobacco till noon, and a hundred other things, that destroy life by inches are all habit; and habits, too, that are generally formed in youth.

And he, or she, parent or teacher, who is successful in forming correct habits for the young, is one of earth's greatest benefactors.

But what is the mode of training the young among us, as a people? Why, as a general thing, we teach our children, both by *precept and example*, to sit up late, sleep in warm, almost air-tight rooms, lie in bed until the sun mounts the heavens, then, instead of washing the whole body, moisten the hands and face with, perhaps, warm water, then eat food inflated with saleratus, and seasoned with

salt to excess, and drink coffee steaming hot, then the face and neck muffled up with comfortables, with *cotton* stockings and *thin* shoes on the feet, then carried to school, with the admonition, "now Mary, now John, mind, you must not go out at recess, you might take cold!"

Now what must necessarily follow such a course of training? Why, pale cheeks, sunken eyes, weak, and perhaps distorted bones, emaciated muscles and trembling nerves, with scrofula and dyspepsia in both sexes. In addition, with the boys, an appetite for tobacco, created with strong coffee, which will soon call for a little wine for the "stomach's sake," because they have indigestion. By and by a "little wine" grows into a great deal.

With the young miss, the result is lung complaint which, for the want of exercise, pure air, and solar light, hurries her to the grave.

Now we hear sighs and murmurings, wondering why one so promising should be called off so young, as if Providence was to blame, when, in fact, nature is only paying the penalty of violated physical laws.

The watch-maker makes the watch to click and run at least twenty-four hours after it is wound up; if, now, the owner abuses that watch, and it stops within twenty-four hours, the watch-maker is not to blame.

In conclusion, let me add that the state of the mind—that is the habits and disposition of the inner man—have a great influence over the physical constitution.

Solomon says, "A merry heart doeth good like a

medicine," while experience and observation teach us, daily, that an angry, fretful, scolding disposition is destructive of health and happiness; and more than this, it exerts a baneful influence over the young around us.

Fretfulness agitates the mind, and throws it into commotion under every trifling circumstance, and destroys all enjoyment, physical as well as moral. For this reason, says Solomon, "fret not thyself in anywise to do evil."

Nothing can be more pernicious than frequent outbursts of angry passions. Persons have been known to pass through the ills of excessive labor, and even intemperance, to old age; but it may be safely doubted whether a single instance can be produced, where a person of violent passion ever attained to a good old age.

destroys The disposition, with the habit of fault-finding, and scolding, is another ~~danger~~ of body as well as mind, both of the scolded and the scolding.

What tears and sighs, what wasting of health, strength and life, follow a constant course of fretting fault-finding and scolding.

John Wesley said, that scolding seemed like tearing the flesh from the bones, and that we have no more right to be guilty of it, than of cursing, or swearing, or stealing.

It is a matter of the highest importance to every one, who wishes to live long, and enjoy life while he does live, to have his brittle vessel, or the house he lives in, glide smoothly, and calmly down the stream of time, amid the rocks and shoals of his probation. For want of proper investigation, thou-

sands expose their bark of life to the rocks, shoals, quicksands and whirlpools of an unknown sea, the consequence is that they are wrecked in the midst of life. "The wicked shall not live out half their days."



